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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,807	09/26/2003	Jeffrey William Balko	W9544-01	6878

7590 05/18/2006

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EXAMINER

NGUYEN, TAM M

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/671,807

Applicant(s)

BALKO, JEFFREY WILLIAM

Examiner

Tam M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/10/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 4-6, and 8-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minhas et al. (US 6,649,061).

Minhas discloses a process for separating of sulfur compounds (e.g., thiophene) from naphtha feed from a fluidized catalytic cracking unit (FCC) by using a membrane to produce a sulfur-rich permeate vapor. The vapor is then condensed and combined with heavy cracked naphtha derived from FCC main column to produce a mixture which is then passed into a sulfur treating process to produce a stream containing about 30 ppm. The feed comprises at least 150 ppm sulfur and the membrane is operated under pervaporation conditions. (See abstract; col. 2, line 54 through col. 3, line 33; col. 5, lines 11-29; col. 6, lines 19-34).

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Minhas does not disclose a step of separating a hydrocarbon mixture into a light fraction and a heavy fraction as claimed, does not disclose a membrane as claimed.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Minhas by utilizing a separation step as claimed because Minhas teaches that the light naphtha and the heavy naphtha come from a FCC main column.

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over reference as applied to claim 1 above, and further in view of White et al. (6,896,796).

Minhas does not disclose that the membrane is polyurean-urethane.

White discloses a process for separating sulfur compounds from a naphtha feed by using a polyurean-urethane membrane. (See abstract; examples 5 and 6; col. 3, lines 46-53)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Minhas by utilizing the membrane as suggested by White because such membrane would produce a sulfur retentate fraction containing less than 30 ppm of sulfur.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over reference as applied to claim 1 above, and further in view of Groten (US 6,946,068)

Minhas does not disclose that the separation step is operated under catalytic distillation conditions.

Groten discloses a desulfurization process wherein a feed mixture comprising naphtha is passed into a catalytic distillation zone to produce a light fraction and a heavy fraction. (See abstract; col. 4 line 23 through col. 5, line 17).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Minhas by utilizing the catalytic distillation zone as suggested by Groten because such zone is effective to remove mercaptans.

Conclusion

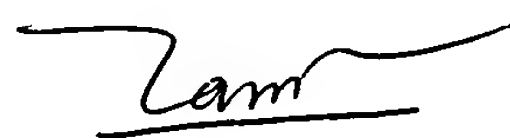
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tam M. Nguyen
Examiner
Art Unit 1764

TN



5/11/06